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May 28, 2004

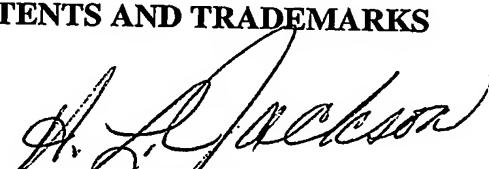
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FILING DATE.

APPLICATION NUMBER: 60/458,489

FILING DATE: March 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/09610

By Authority of the  
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3-34093-6469-03281A1P2

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## PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70039  
Express Mail Label No. EV 208 517 799 US  
Date of Deposit: March 28, 2003

c979 U.S. PTO  
60/458489  
03/28/03

### INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright	Debbie		North Andover, MA
Sagon	Stephen	W.	Amherst, NH

Additional inventors are being named on the separately numbered sheets attached hereto.

### TITLE OF THE INVENTION (280 characters max)

ELECTRODE FOR ELECTROPHYSIOLOGY CATHETER HAVING AN ECCENTRIC SURFACE

### CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:	 23628
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### ENCLOSED APPLICATION PARTS (check all that apply)

Specification - Number of Pages = 8

Drawing(s) - Number of Sheets

Application Data Sheet, See 37 CFR 1.76

Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

No

Yes, the name of the U.S., Government Agency and the Government Contract Number are:

Other: \_\_\_\_\_

### METHOD OF PAYMENT (check all that apply)

A check is enclosed to cover the Provisional Filing Fees.

The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed.

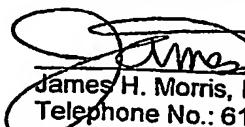
Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT \$ 160.00

Respectfully submitted,

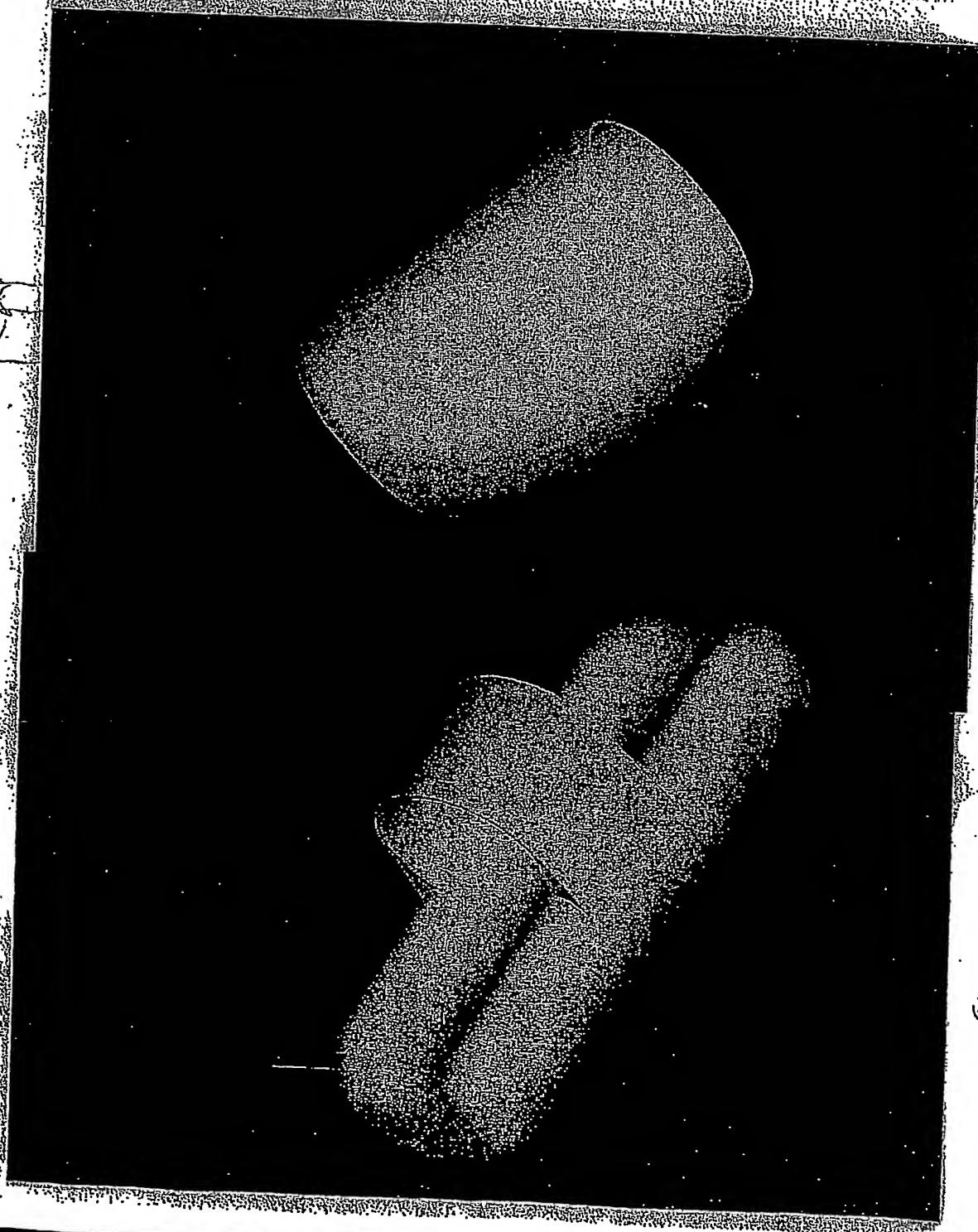
March 28, 2003

Date

  
James H. Morris, Reg. No. 34,681  
Telephone No.: 617-720-3500

### Description of Eccentric Electrode

The "Eccentric Electrode Design" has a large tissue contact surface area. This surface area is larger than the blood contact surface area of the electrode. The objective of the eccentric electrode design is to produce deeper ablation lesions. In addition the eccentric electrode will minimize the mass in contact with the blood. The smaller mass will assure that minimal heating occurs along the blood contact surface. Two embodiments of the eccentric electrode design are shown below.



60458489 . 032803

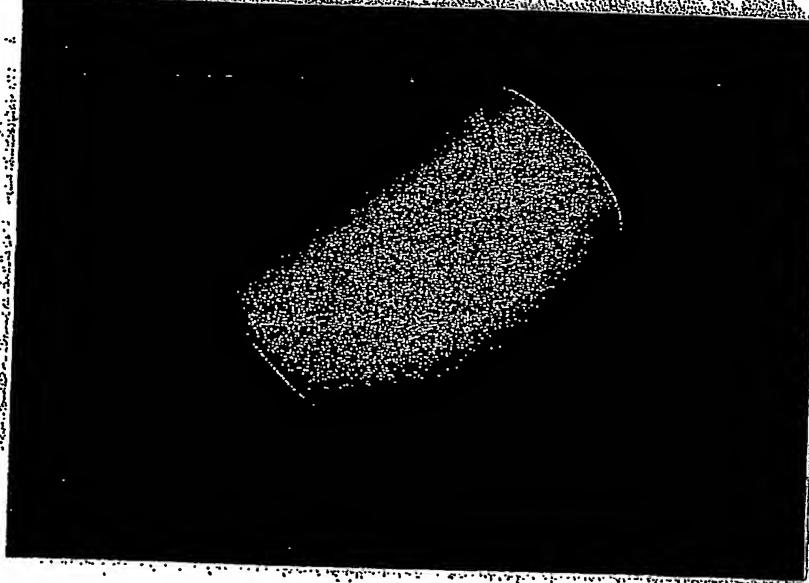


TITLE Eccentric Electrode

From Page No.

## Description of Eccentric Electrode

The "Eccentric Electrode Design" has a large tissue contact surface area. This surface area is larger than the blood contact surface area of the electrode. The objective of the larger tissue contact surface area is to produce deeper ablation lesions. In addition the electrode will minimize the mass in contact with the blood. The smaller mass will assure that minimal heating occurs along the blood contact surface. Two embodiments of the design are shown below.

*Bullock & Storz - Wright*

To Page No. 2

60456489 . 03280

TITLE Eccentric Electrode

From Page No. \_\_\_\_\_

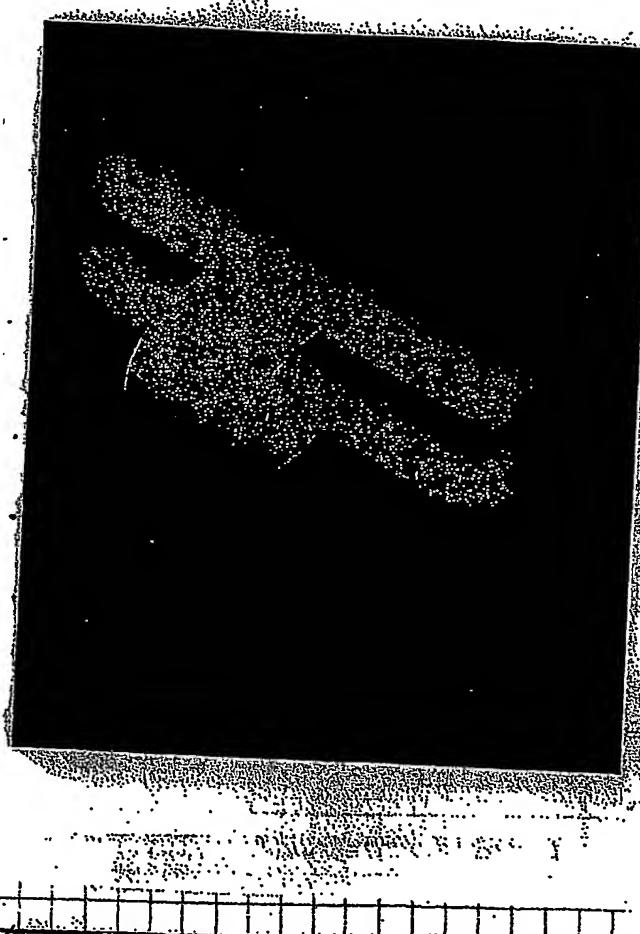


Diagram of the  
Eccentric Electrode

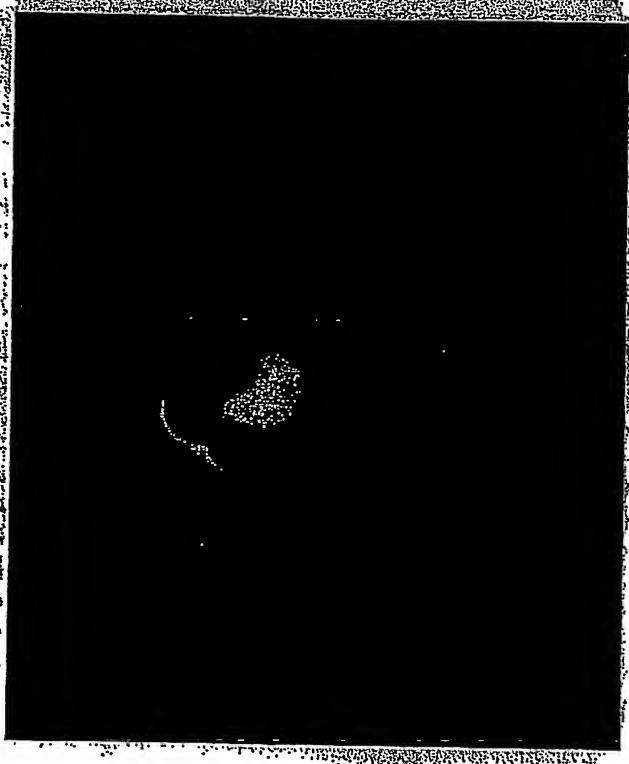
TITLE Eccent

From Page No. \_\_\_\_\_

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TITLE Eccentric Electrode

From Page No.



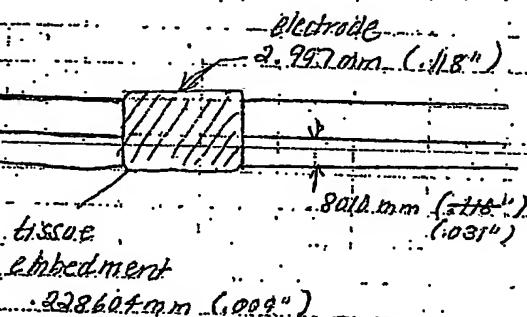
Eccentric Electrode - Night

To Page No.

TITLE Eccentric Electrode Design

From Page No.

Analysis of eccentric electrode design shows that the convective flow across the tissue surface is improved with this design. This design helps to lift the catheter tubing away from tissue surface, thus improving blood flow across the tissue surface. This cooling allows more energy to be transferred into the tissue before reaching the maximum tissue temperature of 100°C. The chart below shows the relative improvement that this design offers over various other designs. The diagram below shows the offset for a 9F, 4mm electrode design.



To Page No.

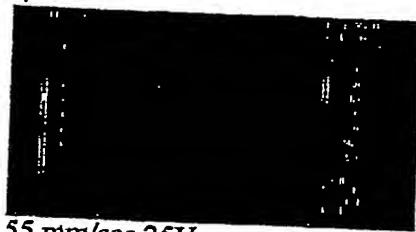
TITLE

Eccentric Electrode Design

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*Temperature and Velocity Profiles*9F Can Guppy 4mm - Temperature and Velocity Profiles

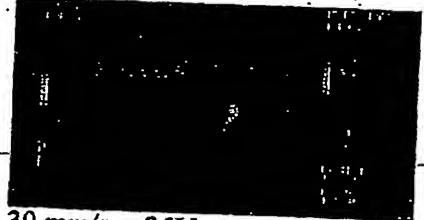
30 mm/sec 25V



55 mm/sec 25V



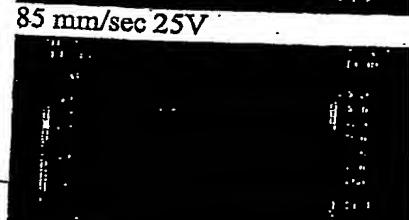
85 mm/sec 25V



30 mm/sec 35V



55 mm/sec 35V



85 mm/sec 35V



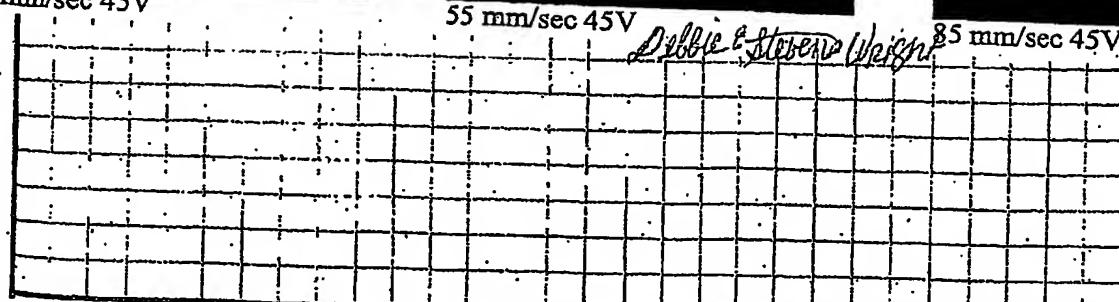
30 mm/sec 45V



55 mm/sec 45V



85 mm/sec 45V

*Debbie E. Stevens (Wright)*

TITLE Eccentric Electrode Design

From Page No.
Comparative
Length
3.5mm
9F Simplified Morgan
4.93
3.5mm
9F Radiator
5.14
3.5mm
9F Guppy (Slim Profile)
5.00
3.5mm
12F Simplified Morgan
6.00
3.5mm
11F Can
5.73
4.0mm
9F BeeHive
5.50
4.0mm
9F Can
5.63
4.0mm
9F Can Guppy
5.73
4.0mm
9F Can Guppy Suspended
5.23
4.00mm
9F Gear
5.48
4.00mm
9F Big Fins
5.30
5.00mm
9F Distal
5.60
5.90
6.0mm
9F Can
19.68
6.0mm
9F BeeHive
6.50
8.0mm
9F Simplified Morgan
4.91
8.0mm
9F Can
6.30
27.79
7.10
33.96
7.30
29.20

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